BANGALORE WATER SUPPLY
AND SEWRAGE BOARD
CAUVERY BHAVAN, KEMPEGOWDA ROAD
BANGALORE - 560 009

Telephone: 91-80-22945106 Fax: 91-80-22945106

Through E-Procurement

TENDER FOR THE WORK OF

DESIGN CONSTRUCTION, AND COMMISSIONING OF **10 MLD STP BASED ON SBR WITH BNR, TERTIARY TREATMENT AND ODOUR CONTROL UNITS AT BASAVANAPURA** INCLUDING 7 OF YEARS OF OPERATION & MAINTENANCE (TURNKEY CONTRACT)

VOLUME 3 of 4

(DRAWINGS)

OCTOBER – 2025

Office of the *Chief Engineer (WWM-E)/CE (UWP)*
BANGALORE WATER SUPPLY & SEWERAGE BOARD
5th Floor, Cauvery Bhavan,
K.G. Road,
Bangalore -560 009
www.eproc.karnataka.gov.in

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1	Process Flow Diagram (10 MLD capacity STP at Basavanapura)	TCE.13052A-CV-3008-SL-30000E	P0
2	Overall Plant Layout with Contours (10 MLD capacity STP at Basavanapura)	TCE.13052A-CV-3008-SL-30500	P0
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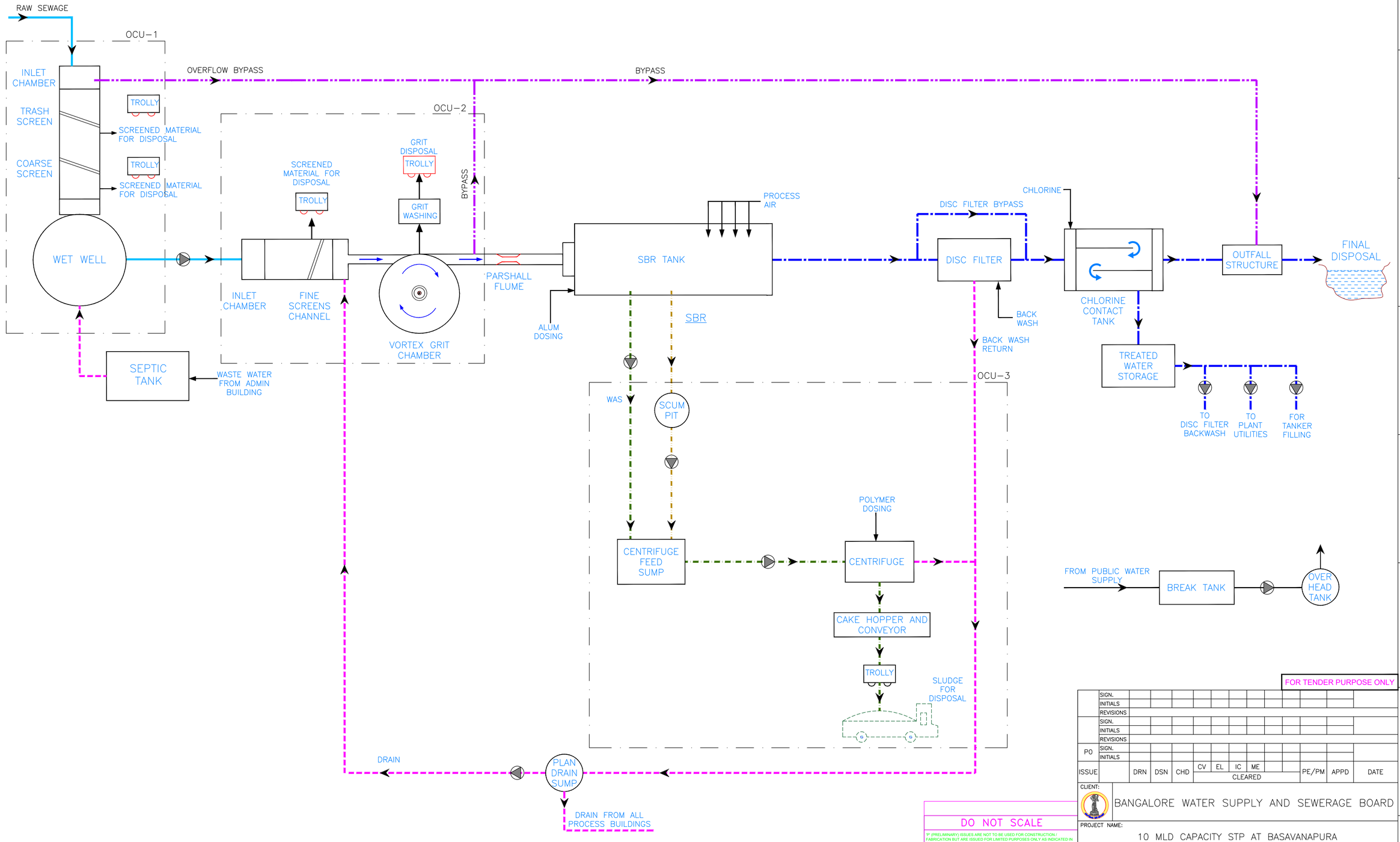
7	Single Line Diagram for the Electrical Works (10 MLD capacity STP at Basavanapura)	TCE.13052A-EL-4000-AU-40055	P0

TITLE: PROCESS FLOW DIAGRAM

DWG NO TCE.13052A-CV-3008-SL-30000E



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	REVISIONS											
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	INITIALS											
ISSUE		DRN	DSN	CHD	CV	EL	IC	ME	CLEARED	PE/PM	APPD	DATE

CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: PROCESS FLOW DIAGRAM

TATA CONSULTING ENGINEERS LIMITED

SCALE : NTS | DWG NO. TCE.13052A-CV-3008-SL-30000E | ISSUE P0

DC & DISC : BLR-CV

SIZE-A1

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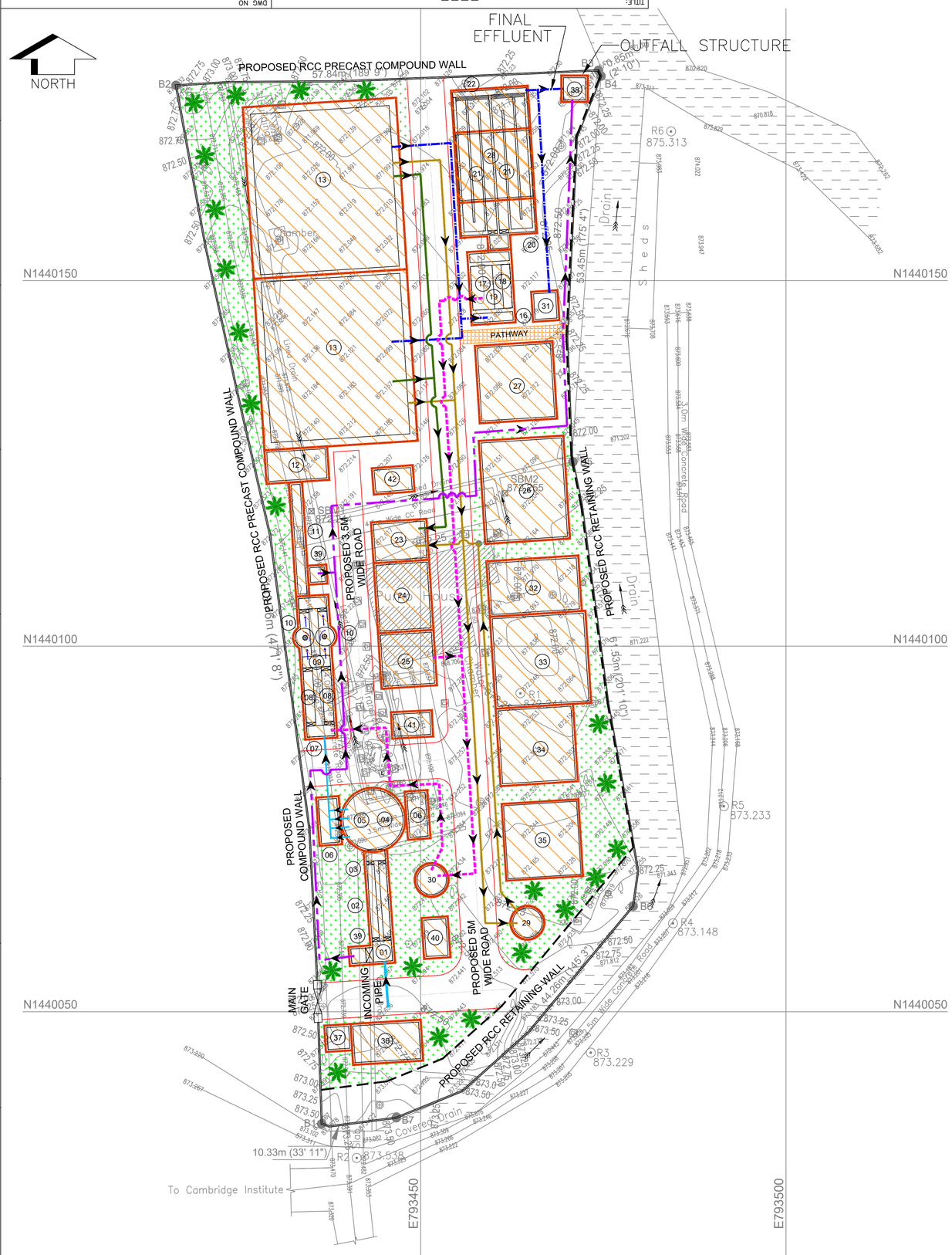
FILE NAME : PFD (10 MLD Basavanapura).dwg

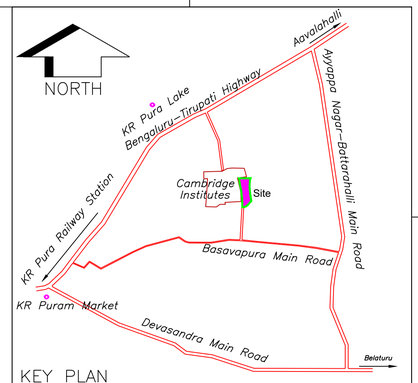
FILE NAME: F-091-Rev-R1.dwg

TCE FORM NO. 091 R1

TITLE: OVERALL PLANT LAYOUT WITH CONTOURS

DWG NO TCE.13052A-CV-3008-SL-30500





KEY PLAN

LIST OF POINTS

POINTS	EASTING	NORTHING	RL
SBM1	793435.060	1440118.464	872.244
SBM2	793461.525	1440120.903	872.255
R1	793463.645	1440093.549	872.241
R2	793441.250	1440030.008	873.538
R3	793473.280	1440044.407	873.229
R4	793484.525	1440062.096	873.148
R5	793491.495	1440078.103	873.233
R6	793484.262	1440170.388	875.313

LIST OF BOUNDARY DETAILS

BOUNDARY POINTS	CO-ORDINATES		DISTANCE INMETRES
	EASTING	NORTHING	
B1	793436.464	1440034.675	
B2	793416.525	1440176.699	143.76
B3	793474.320	1440178.745	57.84
B4	793474.684	1440177.973	0.85
B5	793470.835	1440125.206	53.45
B6	793479.079	1440064.449	61.53
B7	793446.671	1440035.512	10.33

BASAVANAPURA TSPS COMPONENT LIST

SI NO.	COMPONENT NAME	NO. OF UNITS	SIZE IN METERS				
	TERMINAL SEWAGE PUMPING STATION (TSPS)		L	W	LD*/H	DIA	Free board (m)
01	TSPS INLET CHAMBER	1	2.80	2.60	1.10	–	0.75m Above FGL
02	TRASH SCREEN & COARSE SCREEN CHANNEL	2	10.00	1.00	0.80	–	0.75m Above FGL
03	COARSE SCREEN EFFLUENT CHANNEL	1	1.50	2.60	0.70	–	0.75m Above FGL
04	WET WELL	1	–	–	1.50	8.20	0.75m Above FGL
05	PUMPING HOUSE (ABOVE WET WELL)	1	–	–	5.50	8.20	–
06	VALVE CHAMBER	2	6.00	2.50	2.00	–	–

BASAVANAPURA 10MLD STP COMPONENT LIST

SI NO.	COMPONENT NAME	NO. OF UNITS	SIZE IN METERS				
	SEWAGE TREATMENT PLANT (STP)		L	W	LD*/H	DIA	Free board (m)
07	STP INLET CHAMBER	1	1.50	3.80	1.50	–	0.50
08	FINE SCREEN CHANNEL	2	7.00	1.30	0.90	–	0.50
09	FINE SCREEN EFFLUENT CHANNEL	1	1.50	3.80	0.80	–	0.50
10	GRIT CHAMBER	2	–	–	1.50	2.60	0.50
11	PARSHALL FLUME CHANNEL	1	15.00	1.20	0.60	–	0.50
12	SBR FLOW DISTRIBUTION BOX	1	8.00	4.00	2.50	–	0.50
13	SBR TANKS	4	22.00	19.00	6.00	–	0.60
14	NOT USED	–	–	–	–	–	–
15	NOT USED	–	–	–	–	–	–
16	DISC FILTER INFLUENT AND EFFLUENT CHANNEL	1	5.40	1.20	0.50	–	0.50
17	DISC FILTER	1	6.00	3.00	1.50	–	0.50
18	DISC FILTER BYPASS CHANNEL	1	6.00	1.20	0.50	–	0.50
19	DISC FILTER BUILDING(ABOVE DISK FILTER)	1	6.00	5.40	5.50	–	–
20	CCT FLOW DISTRIBUTION BOX	1	2.50	1.80	1.40	–	0.50
21	CHLORINE CONTACT TANK	2	18.00	4.55	1.35	–	0.50
22	CCT EFFLUENT CHANNEL	1	10.00	1.20	0.50	–	0.50
23	CENTRIFUGE FEED SUMP	1	7.00	5.00	3.50	–	1.00
24	CENTRIFUGE FEED PUMP HOUSE	1	7.00	9.00	5.50	–	–
25	CENTRIFUGE BUILDING(G+1)	1	7.00	7.00	5.50	–	–
26	BLOWER BUILDING(INCLUDING ELECTRICAL PANEL)	1	11.00	13.50	9.00	–	–
27	CHEMICAL BUILDING	1	10.00	10.00	5.50	–	–
28	CHLORINATION BUILDING(ABOVE CCT)	1	10.00	9.00	5.50	–	–
29	SECONDARY SCUM PIT	1	–	–	1.50	4.00	1.50
30	PLANT DRAIN SUMP	1	–	–	1.50	4.00	2.00
31	TREATED WATER STORAGE	1	3.50	3.00	3.00	–	1.00
32	TRANSFORMER YARD	1	12.00	7.00	–	–	–
33	ELECTRICAL SUB STATION(TSPS/STP)	1	12.00	12.50	5.50	–	–
34	PLANT DG ROOM	1	10.00	10.00	6.50	–	–
35	ADMIN BUILDING INLUDES PLC SCADA,LABORATORY(G+1)	1	10.00	10.00	4.50	–	–
36	PARKING SHED	1	9.00	5.00	4.50	–	–
37	GUARD ROOM(SECURITY ROOM)	1	3.00	3.00	3.00	–	–
38	OUTFALL CHAMBER	1	3.00	3.00	1.50	–	–
39	OVERFLOW CHAMBER	2	2.00	2.00	1.50	–	0.50
40	ODOUR CONTROL ROOM(OCU 1) NEAR TSPS	1	6.00	4.00	6.00	–	–
41	OCU 2 (Near Preliminary treatment units)	1	6.00	4.00	6.00	–	–
42	OCU 3 (Near Sludge handling units)	1	6.00	4.00	6.00	–	–

AREA STATEMENT

Area in Sqmt	Area in Acre
6120.018	1.512

LEGENDS:

- RAW SEWAGE PIPE
- BYPASS LINE
- SLUDGE PIPE
- SCUM PIPE
- SUPERNATANT PIPE
- PROPOSED ROAD
- TREATED WATER
- EXISTING ROAD
- (10) PROPOSED STP UNITS
- PROPOSED RCC PRECAST COMPOUND WALL
- PROPOSED RCC RETAINING WALL
- ASPHALT ROAD, CONCRETE ROAD.
- DRAIN, BUILDING/SHEET HOUSE.
- COMPOUND WALL WITH GATE, FENCE.
- POWER POLE & LINE, TRANSFORMER.
- ORDINARY, MANGO TREE, CHAMBER, MANHOLE, LAMP POST. (CH)
- BOUNDARY & POINTS, ELECTRIC BOX. (B1, B2, E)
- CONTOUR WITH CONT RL, SPOT LEVELS. (872.25, 872.079)
- CHAMBER INVERT LVL, DRAIN CENTER LVL. MANHOLE INVERT LVL, (869.651, 871.992, 870.454)
- BENCH MARKS, TRAVERSE POINTS. (SBM1, R1)

NOTES:

1. ALL LEVELS ARE IN METERS,UNLESS OTHER WISE MENTIONED.
2. ALL LEVELS ARE WITH REFERENCE TO THE GTS BENCH MARK ENGRAVED ON CENTER OF 2ND STONES ON EAST SIDE OF QUEEN VICTORIA'S STATUE IN CUBBON PARK,BANGALORE.ITS VALUE IS 912.266M.
3. ALL THE CO-ORDINATES ARE BASED ON UTM WGS-84.
4. ALL THE PROCESS AND NON-PROCESS BUILDING DIMENSIONS SHOWN ARE MINIMUM AND HEIGHT OF THE BUILDING SHALL BE FROM FINISHED FLOOR LEVEL TO BOTTOM OF THE ROOF BEAM.
5. FINISHED FLOOR LEVEL OF ALL PROCESS AND NON PROCESS BUILDING SHALL BE ATLEAST 500MM ABOVE THE FINISHED GROUND LEVEL.
6. FINISHED GROUND LEVEL (FGL) OF THE STP SHALL BE MINIMUM 500MM ABOVE THE HFL.
7. ALL THE BUILDING DIMENSIONS (OR AREA WHEN CALCULATED) SHOWN ARE MINIMUM. HOWEVER, CONTRACTOR MAY UPSIZE THESE DIMENSIONS (OR AREA WHEN CALCULATED) BASED ON HIS DESIGN TO MEET THE SPECIFIED TENDER REQUIREMENTS.
8. TOTAL LENGTH OF PROPOSED 5m WIDE ROAD = 180m
7. TOTAL LENGTH OF PROPOSED 3.5m WIDE ROAD = 43m
8. TOTAL LENGTH OF PROPOSED RCC PRECAST COMPOUND WALL = 200m
9. TOTAL LENGTH OF PROPOSED RCC RETAINING WALL = 165m
10. THE CONTRACTOR SHALL VISIT THE SITE TO ASSESS THE EXISTING PUMP HOUSE AND ANY OTHER STRUCTURE(S) FOR COMPLETE DEMOLITION IN LINE WITH TENDER REQUIREMENTS TO ACCOMMODATE THE PROPOSED STP UNITS AS SHOWN IN THIS LAYOUT.

HFL : 874.360

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					CLEARED							

CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: OVERALL PLANT LAYOUT WITH CONTOURS

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FILE NAME : LAYOUT (10 MLD Basavanapura).dwg

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SCALE : NTS | DC & DISC : BLR-CV | DWG NO. TCE.13052A-CV-3008-SL-30500 | ISSUE P0 | SIZE-A1

FILE NAME: F-091-Rev-R1.dwg

TCE FORM NO. 091 R1

TITLE: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS AT 10MLD STP, BASAVANAPURA

DWG NO: TCE.13052A-EL-4001-AU-40051

INCOMERS FROM THE FROM NEAREST KPTCL/BESCOM SUBSTATION

11kV Al. CONDUCTOR, XLPE, ARM. UNDER GROUND CABLE

3 WAY RMU (DAS)
11kV, 630A, 350 MVA
(2 OD + 1VL)
(AS PER BESCOM SPECS.)

11kV, 630A ISOLATOR+ES

11kV, 630A ISOLATOR+ES

11kV, 630A VCB

11kV, AL ARMOURED XLPE CABLE

METERING CUBICLE
11KV, 3 CT & 3 PT
(AS PER BESCOM SPECS.)

TTB TVM

BESCOM'S SCOPE

PROPOSED WORKS UNDER CONTRACTOR'S SCOPE

11KV OUTDOOR VCB PANEL

11kV VCB

11kV, AL ARMOURED XLPE UNEARTHED CABLE

11kV METAL ENCLOSED SWITCHBOARD
LOC: 11kV HT ROOM

TO TRAFO OUTGOING

VSS+DV R Y B

MCB

BUS PT

11kV/110V/110V
CL.-0.5 (METERING)
CL.-3P (PROTECTION)

Line PT-1
11kV/110V/110V
CL.-0.5 (METERING)
CL.-3P (PROTECTION)

SA

MCB

MCB

VSS+DV R Y B

PROTECTION CT CL:5P20 — R 50,50N,51,51N,27,50BF,95,94 — NUMERICAL RELAY — PLC

METERING CT CL:1 — MFM ASS+DA

11kV VCB INCOMER

86

(ON I/C FEEDER)

BON BOFF T TCH SC
DCF RC BS BT ACF

11kV, 3PH, 50HZ, TP, CU BUSBAR, 26.25kA FOR 1SEC

(ON O/G FEEDER)

95 94 86

BON BOFF T TCH SC
DCF RC BS BT ACF

11kV VCB — 86 — 50,50N,51,51N,49,24,50BF 94,WTI,OTI,BR,OSR,PRV 51NS,46

P1

METERING CT CL:1 — MFM

PROTECTION CT CL:5P20 — R 50/51 50N — N.RELAY — PLC

SA P2

PLC

TRANSFORMER ANNUNCIATION (TYP)

MARSHELLING BOX(TYP)

11kV, AL ARMOURED XLPE UNEARTHED CABLE

TR-1, 11kV/433V, ONAN, Z=% AS PER IS:1180, DYN11, OUTDOOR PLINTH MOUNTED WITH WTI, OTI, BR, MOG, OSR PRV WITH TAP CHANGER INDICATION WITH +5% TO -15% TAPS IN STEPS OF 2.5%

R 51NS

NON - SEGREGATED TPN ALUMINIUM BUSDUCT

TR-2, 11kV/433V, ONAN, Z=% AS PER IS:1180, DYN11, OUTDOOR PLINTH MOUNTED WITH WTI, OTI, BR, MOG, OSR PRV WITH TAP CHANGER INDICATION WITH +5% TO -15% TAPS IN STEPS OF 2.5%

R 51NS

NON - SEGREGATED TPN ALUMINIUM BUSDUCT

DG ROOM

415V DG SET#01 WITH AMF CONTROL PANEL — G

415V DG SET#02 WITH AMF CONTROL PANEL — G

1.1kV XLPE AL ARMOURED CABLE

DG PCC
SUB-STATION BUILDING

TPN ACB

TPN ACB

TPN ACB

1.1kV XLPE AL ARMOURED CABLE

415V PCC
LOC: SUB-STATION BUILDING

ON MCCB: ON OFF TRIP

ON ACB: BON BOFF TCH SC T RC

MCB R Y B

METERING CT CL.-1.0 — 3 — 1 — MFM — TO PLC (RS485)

EDO,ACB,TPN WITH MICROPROCESSOR RELEASE FOR O/C, E/F, UV & S/C

INCOMER-1 NC

415V, 3PH, 50HZ, TPN, CU BUSBAR 50KA FOR 1SEC

BUS-1

BUS-2

I/L

NO

BUSCOUPLER SAME AS INCOMER

INCOMER-2 NC

EDO,ACB,TPN WITH MICROPROCESSOR RELEASE FOR O/C, E/F, UV & S/C

DG INCOMER NO

EDO,ACB,TPN WITH MICROPROCESSOR RELEASE FOR O/C, E/F, UV & S/C

FUSE — 415/230V AC — TR — MCB DP

TPN MCCB

TPN ACB

KVAr APFCR

1.1kV XLPE CU/AL ARMOURED CABLE

FOR FEEDERS CONTROL SUPPLY

RTCC PANEL

BATTERY CHARGER

AIR BLOWER MCC

MLDB

EFDB SS BLDG

EFDB DG BLDG.

SPARE

CAPACITOR BANK WITH APFC

CAPACITOR BANK WITH APFC

CHLORINE MCC

RAS MCC

TSPS MCC

CENTRIFUGE MCC

RTCC PANEL

HEADWORKS MCC

SPARE

FOR FEEDERS CONTROL SUPPLY

SPARE 2 Nos

SPARE 2 Nos

LEGENDS:-

R RELAYING

50	INSTANTANEOUS PHASE OVER CURRENT RELAY SUFFIX N- GROUND
51	INVERSE DEFINITE MINIMUM TIME OVER CURRENT RELAY SUFFIX N- GROUND, SUFFIX NS-STANDBY EARTH
95	TRIP CIRCUIT SUPERVISION RELAY
94	ANTI-PUMPING RELAY
27	UNDER VOLTAGE RELAY
86	LOCKOUT RELAY (HAND RESET)
OSR	OIL SURGE RELAY
PRV	PRESSURE RELEASE VALVE
50BF	BREAKER FAIL
46	REVERSE PHASE/UNBALANCE
24	VOLTS PER HERTZ RELAY
49	TRANSFORMER THERMAL RELAY
64R	RESTRICTED EARTH FAULT PROTECTION RELAY

- 3-PH DISTRIBUTION TRANSFORMER
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- CABLE TERMINATION
- 415V DRAW OUT TYPE AIR CIRCUIT BREAKER
- 11kV DRAW OUT TYPE VACUUM CIRCUIT BREAKER
- 415V MOULDED CASE CIRCUIT BREAKER
- 415V MINIATURE CIRCUIT BREAKER
- BREAKER CONTROL SWITCH
- INDICATING LAMP
- M MOTOR
- STAR-DELTA STARTERS WITH SINGLE PHASE PREVENTOR AND MPR
- DIRECT ONLINE STARTERS WITH SINGLE PHASE PREVENTOR AND MPR
- G DG SET WITH AMF CONTROL PANEL
- TCH TRIP CIRCUIT HEALTHY INDICATION (WHITE LED)
- SCI SPRING CHARGED INDICATION (BLUE LED)
- BON BREAKER ON INDICATION (RED LED)
- BOFF BREAKER OFF INDICATION (GREEN LED)
- T TRIPPED ON FAULT INDICATION (AMBER LED)
- DCF DC SUPPLY FAIL INDICATION (AMBER LED)
- BS BREAKER IN SERVICE POSITION (RED LED)
- BT BREAKER IN TEST POSITION (CLEAR LED)
- ACF AC SUPPLY FAIL INDICATION (AMBER LED)
- ON ON INDICATION (RED LED)
- OFF OFF INDICATION (GREEN LED)
- TRIP TRIP INDICATION (AMBER LED)
- R R-PHASE INDICATION LAMP (RED LED)
- Y Y-PHASE INDICATION LAMP (YELLOW LED)
- B B-PHASE INDICATION LAMP (BLUE LED)
- LOCAL/OFF/REMOTE SELECTOR SWITCH
- SA SURGE ARRESTER
- ASS+DA DIGITAL AMMETER WITH BUILT IN SELECTOR SWITCH
- VSS+DV DIGITAL VOLTMETER WITH BUILT IN SELECTOR SWITCH
- 415V, FIXED TYPE MOTOR PROTECTION CIRCUIT BREAKER (MPCB)
- ICP INSTRUMENTATION CONTROL PANEL
- N.RELAY NUMERICAL RELAY
- MFM MULTI FUNCTION METER WITH RS485 COMMUNICATION (AMMETER, VOLTMETER, PF, FREQUENCY)
- PLC PROGRAMMABEL LOGIC CONTROLLER
- MPR COMPREHENSIVE MOTOR PROTECTION RELAY
- M METERING UNIT
- CAPACITOR BANK
- LCSP LOCAL CONTROL STARTER PANEL
- TTB(CT SHORT LINK)
- SS SOFT STARTER
- ISO LOCAL ISOLATOR SWITCH
- RC READY TO CLOSE (CLEAR LED)
- LCP LOCAL CONTROL PANEL
- TR CONTROL TRANSFORMER
- I/L INTER LOCK

INTERLOCK:

INCOMER-1	INCOMER-2	BUS COUPLER	DG
ON	ON	OFF	OFF
ON	OFF	ON	OFF
OFF	OFF	ON	ON
OFF	ON	ON	OFF

NOTES:

1. TRIP COIL CIRCUITS OF ALL CIRCUIT BREAKERS SHALL BE PROVIDED WITH TRIP SUPERVISION RELAY TO SUPERVISE THE CIRCUIT IN BOTH OPEN AND CLOSED POSITION OF CIRCUIT BREAKERS.
2. ALL RELAYS USED IN 11kV SWITCHGEAR SHALL BE NUMERICAL TYPE.
3. AMMETERS IN MOTOR FEEDERS SHALL BE PROVIDED WITH SUPPRESSED SCALE UP TO 6 TIMES FULL LOAD CURRENT FOR INDICATION STARTING CURRENT.
4. ACB's SHALL BE PROVIDED WITH MICROPROCESSOR RELEASES FOR ADJUSTABLE OVERLOAD SHORT CIRCUIT, UNDER VOLTAGE AND EARTH FAULT FOR LT BREAKER. VCB'S SHALL BE PROVIDED WITH SHUNT TRIP COILS RATED WITH 110V DC FOR HT BREAKER.
5. MCCB's SHALL BE PROVIDED WITH ELECTRONIC RELEASES FOR ADJUSTABLE OVERLOAD, SHORT CIRCUIT AND EARTH FAULT.
6. ALL PANEL WIRING SHALL BE WITH 1100 VOLTS GRADE PVC INSULATED 1.5 Sqmm STRANDED COPPER WIRE FOR CONTROL WIRING & 2.5 Sqmm FOR CT SECONDARY WIRING.
7. ALL CT'S SHALL BE OF 5A SECONDARY.
8. ALL CONTACTOR/TIMERS etc., SHALL BE RAIL MOUNTED.
9. MINIMUM CONTACTOR RATING SHALL BE 16A.
10. CONTROL SUPPLY SHALL BE 240V AC TAPPED BETWEEN PHASE AND NEUTRAL FEEDERS MODULES.
11. MPCB SHALL BE WITH IN BUILT SINGLE PHASING PREVENTER.
12. ALL CONTACTORS SHALL BE OF AC 3 DUTY.
13. WIDTH OF FEEDER COLOUMN SHALL BE MINI 500 mm CABLE ALLEY SHALL BE 300mm MINI.
14. ALL ACB, MCCB, CONTACTORS, MPCB, & MPR SHALL BE OF TYPE-2 CO-ORDINATION.
15. LCP SHALL BE AS INDICATED IN P&ID.
16. CT RATIO SHALL BE 20% MORE THAN THE FLC 0.85PF & 0.9 EFFICIENCY.
17. CABLE COMPARTMENT SHALL HAVE LED LAMP INTERLOCKED WITH DOOR.
18. ALL INDICATION LAMP SHALL HAVE LED CLUSTER TYPE.
19. ALL MCCB SHALL HAVE EXTENDED ROTORY HANDLE & EXTENDED BUSBAR LINK
20. OPERATION LOGIC OF 415V SWITCHBOARD:

(A) AT NORMAL CONDITION BOTH THE TRANSFORMER INCOMER FEEDER SHALL BE IN CLOSED POSITION. THE BUS COUPLER AND DG INCOMER IN OPEN POSITION.

(B) IN CASE OF FAULTS, THE FAULTY INCOMER FEEDER SHALL BE OPEN POSITON THE BUS COUPLER AND THE HEALTHY INCOMER FEEDER SHALL BE CLOSED POSITON.

(C) IN CASE OF POWER FAILURE, THE DG INCOMER, BUS COUPLER SHALL BE IN CLOSED POSITION. BOTH THE TRANSFORMER INCOMER SHALL BE SWITCHED OFF BY ACTIVATION OF UNDER VOLTAGE RELAY OF THE GRID INCOMER.

21. MOTOR FEEDER <5.5kW WILL HAVE DIRECT CONNECTED AMMETER IN Y PHASE, MOTORS >5.5kW UPTO 15kW WILL BE PROVIDED WITH 1 CT AND AMMETER AND MOTOR >15kW AND ABOVE WILL BE PROVIDED WITH 3 CTS AND AMMETER.
22. NECESSARY INTERLOCK TO SPACE HEATER WITH MOTORS TO BE PROVIDED.
23. ALL MCB SHALL HAVE KW = 100% Ics.
24. ALL MCCB CONNECTED TO MOTOR SHALL BE RATED TO MOTOR DUTY.
25. ALL ACB SHALL HAVE Icu = Ics = Icw.
26. THE 415V SIDE OF THE TRANSFORMER IS PROVIDED WITH NON SEGREGATED ALUMINUM BUS DUCT IF THE TRANSFORMER RATING IS GREATER THAN OR EQUAL TO 1000KVA. FOR THE TRANSFORMER RATING IS LESS THAN 1000KVA XLPE AL ARMUED CABLE SHALL BE PROVIDED ON 415V SIDE.
27. CABLE SIZES LESS THAN OR EQUAL TO 6 Sqmm SHALL BE PROVIDED WITH COPPER CONDUCTORS AND AL CONDUCTORS TO BE USED FOR CABLE SIZES ABOVE 6 Sqmm.
28. CAPACITOR BANK WITH APFC SHALL BE PROVIDED WITH INTERLOCK SUCH THAT PANELS ARE FED BY DG SET, CAPACITOR BANK SHALL BE DISCONNECTED.
29. 20% SPARE FEEDERS WITH MINI OF 1 SPARE FEEDER FOR EACH RATING OF THE OUTGOING FEEDERS SHALL BE PROVIDED IN LT PANELS (PCC/MCC).
30. PORTABLE TYPE STARTER WILL BE PROVIDED FOR GATES.

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CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS SHEET 01 OF 05

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SCALE : NTS | DWG NO. TCE.13052A-EL-4001-AU-40051 | ISSUE P0 | SIZE-A1

DC & DISC: BLR-EL

FILE NAME: F-091-Rev-R1.dwg

TCE FORM NO. 091 R1

TITLE: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS AT 10MLD STP, BASAVANAPURA

DWG NO TCE.13052A-EL-4000-AU-40052

NOTES:-

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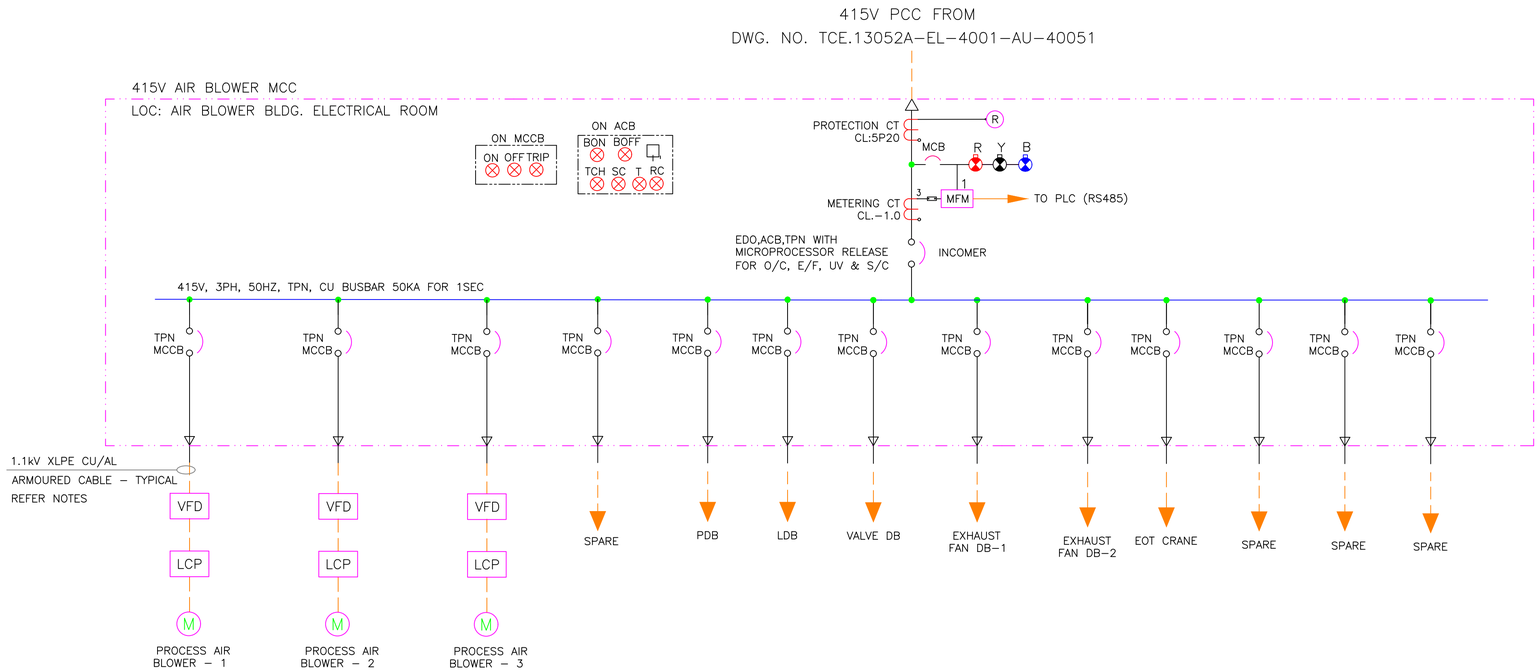

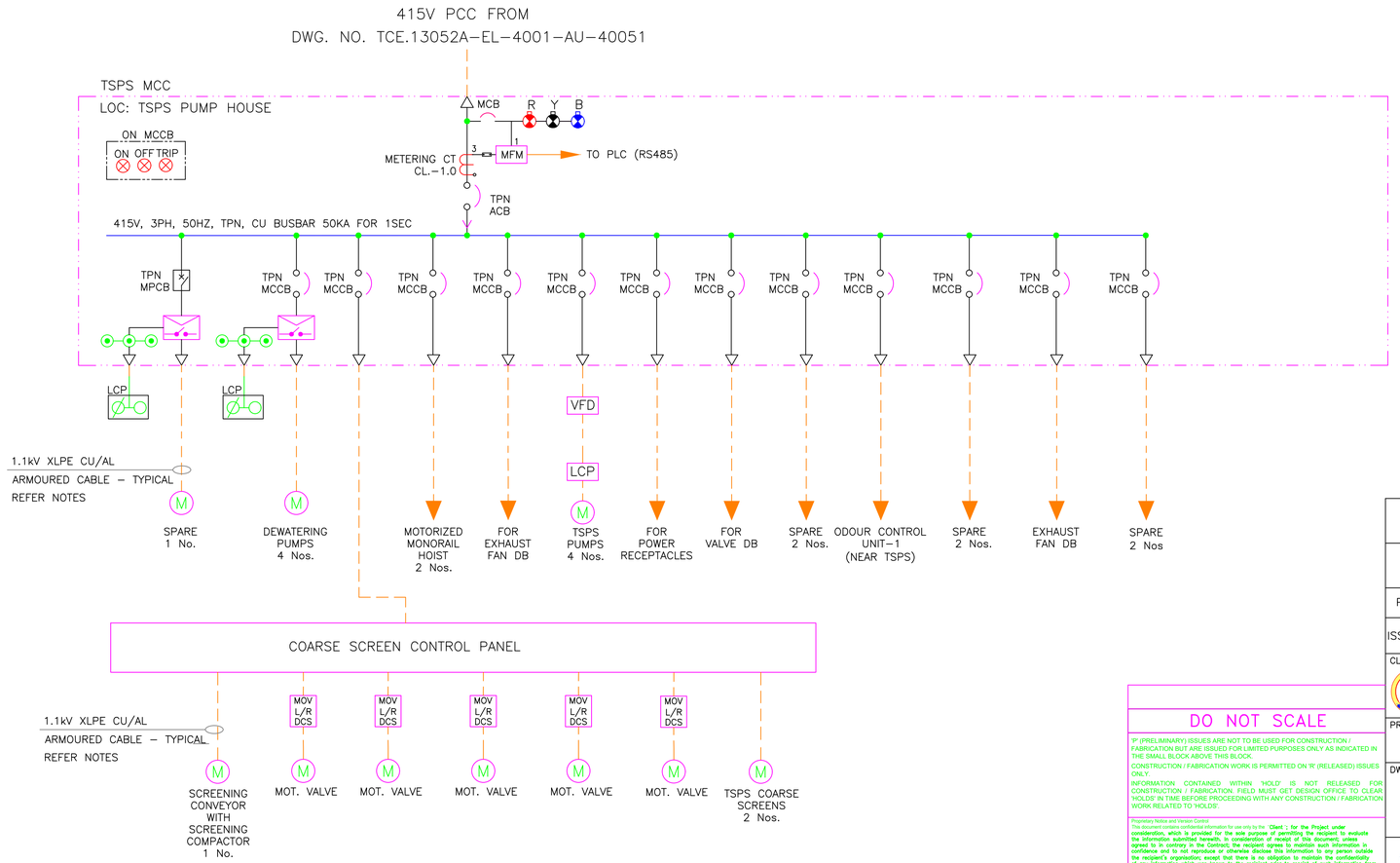

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CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS SHEET 02 OF 05

TATA CONSULTING ENGINEERS LIMITED
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FILE NAME: F-091-Rev-R1.dwg

TCE FORM NO. 091 R1

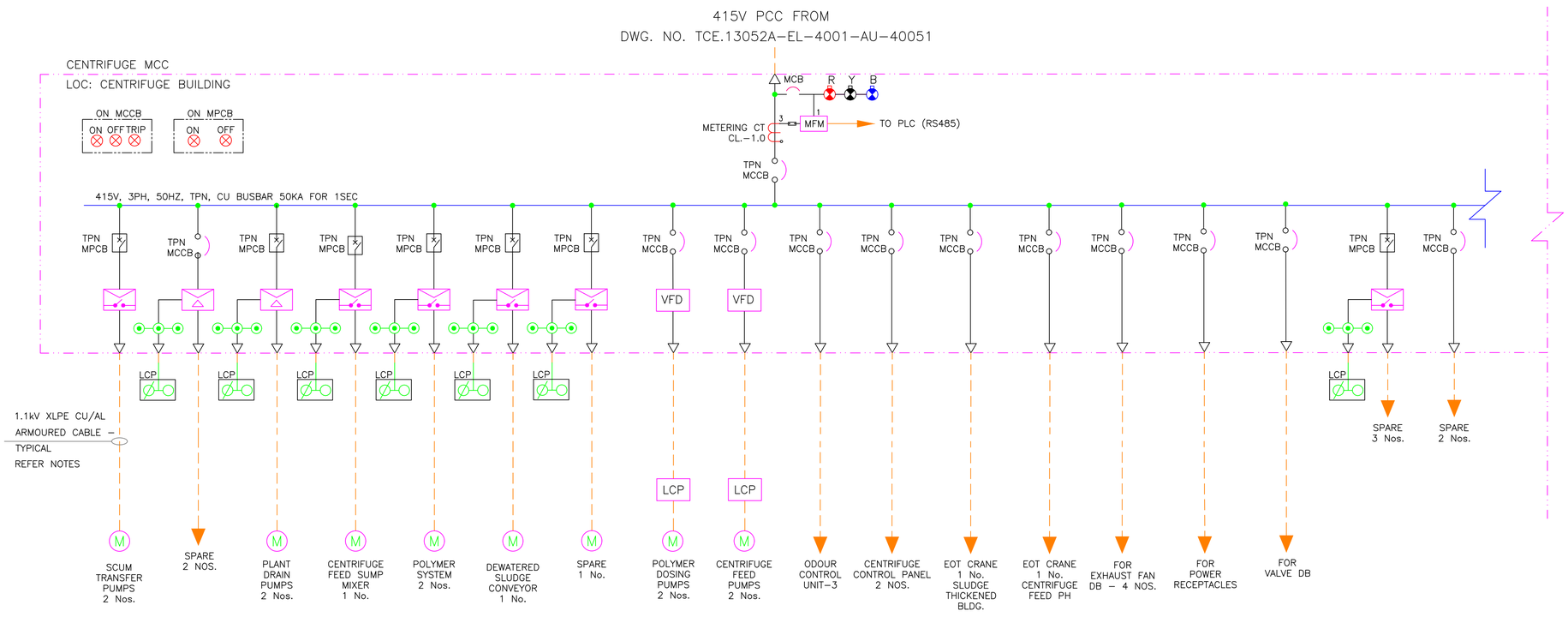
SIZE-A1

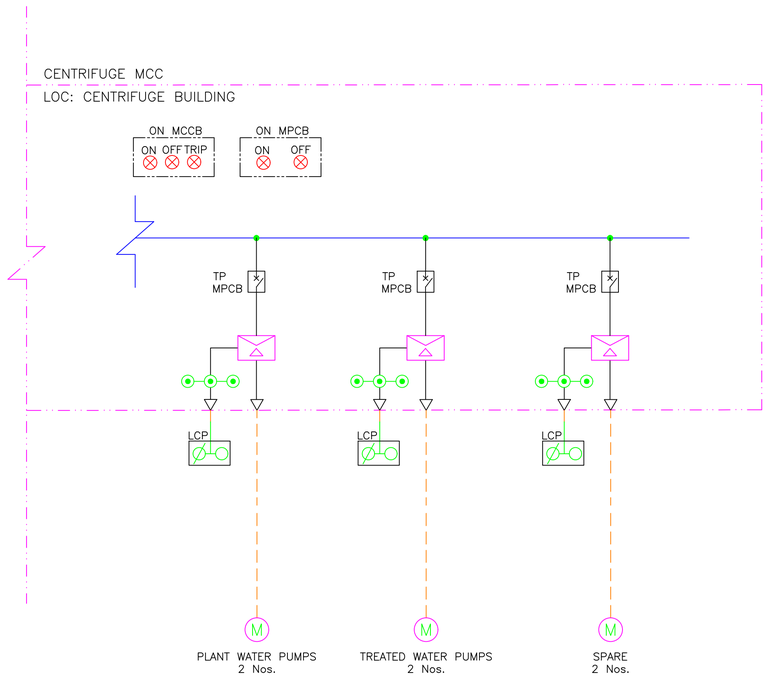
TITLE: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS AT 10MLD STP, BASAVANAPURA

DWG NO: TCE.13052A-EL-4000-AU-40043

NOTES:-

1. FOR GENERAL NOTES, LEGENDS, REFER DRAWING NO. TCE.13052A-EL-4001-AU-40051.





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CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS SHEET 03 OF 05

TATA CONSULTING ENGINEERS LIMITED
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FILE NAME : SLD (10 MLD Basavanapura).dwg	SCALE : NTS	DWG NO. TCE.13052A-EL-4000-AU-40053	ISSUE P0
	DC & DISC : BLR-EL		SIZE-A1

FILE NAME: F-091-Rev-R1.dwg

TCE FORM NO. 091 R1

DWG NO: TCE.13052A-EL-4000-AU-40054

SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS AT 10MLD STP, BASAVANAPURA

NOTES:-

1. FOR GENERAL NOTES, LEGENDS, REFER DRAWING NO. TCE.13052A-EL-4001-AU-40051.

415V PCC FROM
DWG. NO. TCE.13052A-EL-4001-AU-40051

HEADWORKS MCC
LOC: SUBSTATION BUILDING

ON MCCB: ON OFF TRIP
ON MPCB: ON OFF

MCB R Y B
METERING CT CL.-1.0
MFM → TO PLC (RS485)
TPN MCCB

415V, 3PH, 50HZ, TPN, CU BUSBAR 50KA FOR 1SEC

TPN MCCB	TPN MPCB	TPN MPCB	TPN MPCB	TPN MPCB	TPN MCCB	TPN MCCB	TPN MCCB	DP MCB	DP MCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MPCB	TPN MCCB	TPN MCCB	
LCP	LCP	LCP	LCP										LCP			
FINE SCREEN PANEL	GRIT MECHANISM DRIVE 2 Nos.	GRIT TRANSFER PUMP 2 Nos.	GRIT WASHER MECHANISM 2 Nos.	GRIT DISCHARGE CONVEYOR 2 Nos.	EOT CRANE PRIMARY TREATMENT	SPARE	SPARE	FOR AIR CONDITIONING IN SCADA, CONTROL ROOM BUILDING – 2 NOs.	FOR AIR CONDITIONING IN CONFERENCE HALL, ENGINEERS ROOM – 2NOs.	SPARE	FOR POWER RECEPTACLES	FOR VALVE DB	SPARE 2 Nos.	SPARE 2 Nos.	ODOUR CONTROL UNIT-2 (NEAR HEAD WORKS)	

1.1kV XLPE CU/AL ARMOURED CABLE – TYPICAL REFER NOTES

FINE SCREEN CONTROL PANEL

1.1kV XLPE CU/AL ARMOURED CABLE – TYPICAL REFER NOTES

SCREENING CONVEYOR WITH SCREENING COMPACTOR 1 No.	MOV L/R DCS → MOT. VALVE	MOV L/R DCS → MOT. VALVE	MOV L/R DCS → MOT. VALVE	MOV L/R DCS → MOT. VALVE	MOV L/R DCS → MOT. VALVE	FINE SCREENS 2 Nos. – 3 KW

415V PCC FROM
DWG. NO. TCE.13052A-EL-4001-AU-40051

RAS MCC
LOC: SUBSTATION BUILDING

ON MCCB: ON OFF TRIP
ON MPCB: ON OFF

MCB R Y B
METERING CT CL.-1.0
MFM → TO PLC (RS485)
TPN MCCB

415V, 3PH, 50HZ, TPN, CU BUSBAR 50KA FOR 1SEC

TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB	TPN MCCB
VFD	VFD	VFD				VFD					
LCP	LCP	LCP				LCP					
DECANTER 4 NOS.	RETURN ACTIVATED SLUDGE PUMPS 8 Nos.	WASTE ACTIVATED SLUDGE PUMPS 8 Nos.	MOTORISED HOIST 2 NO.	SPARE 2 No.	FOR EXHAUST FAN DB	SBR FEED PUMPS 4 Nos.	FOR POWER RECEPTACLES	FOR VALVE DB	SPARE 2 NOS.	MOTORISED HOIST 1 NO.	SPARE 1 No.

1.1kV XLPE CU/AL ARMOURED CABLE – TYPICAL REFER NOTES

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CLIENT: BANGALORE WATER SUPPLY AND SEWERAGE BOARD

PROJECT NAME: 10 MLD CAPACITY STP AT BASAVANAPURA

DWG NAME: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS SHEET 04 OF 05

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ISSUE P0

FILE NAME : SLD (10 MLD Basavanapura).dwg

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DWG NO: TCE.13052A-EL-4000-AU-40055

NOTES:-

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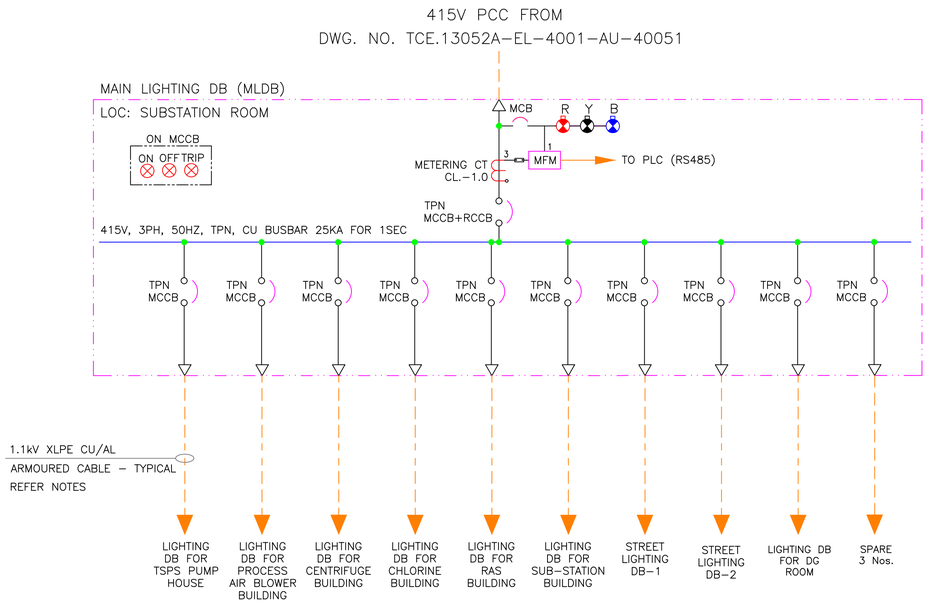

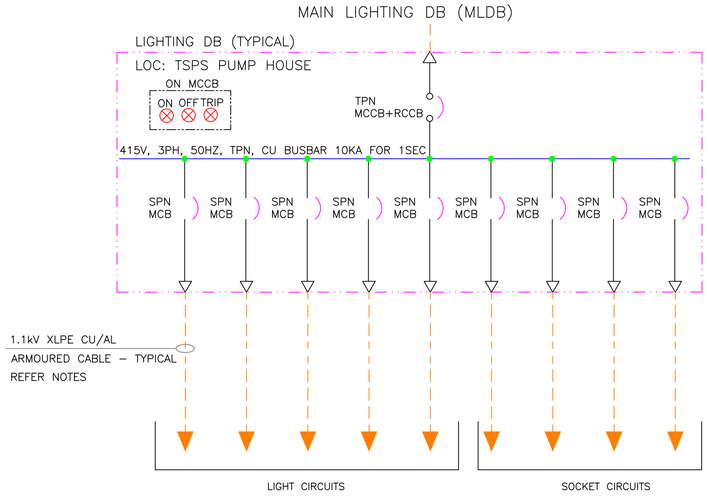

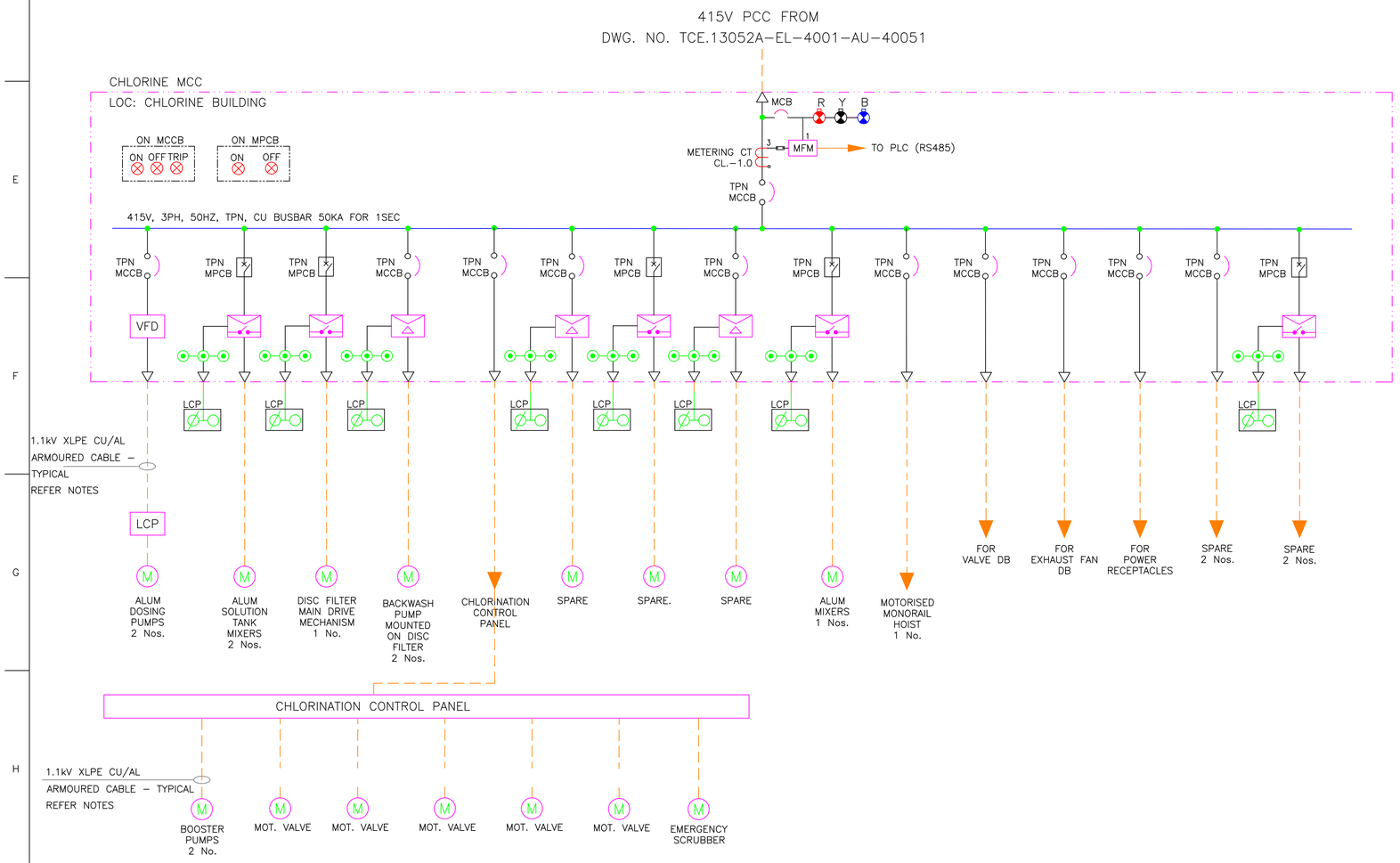

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DWG NAME: SINGLE LINE DIAGRAM FOR THE ELECTRICAL WORKS SHEET 05 OF 05

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